Local Watershed Action Plan Guide

Created by Kentucky Division of Water

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INTRODUCTION

The purpose of this document is to guide the user through the process of gathering information, defining goals and objectives, and developing ideas for solutions to watershed problems. This is not a comprehensive planning guide but will provide a reference to resources and funds that can assist in solving watershed issues and to highlight key questions and issues.

Background

As part of a national EPA initiative, Kentucky has embarked on the development and coordination of a comprehensive Watershed Management Framework for use in managing and preserving natural resources in Kentucky. The Framework employs a multi-media, resource-centered approach and makes extensive use of partnerships and leveraging of resources. Success is measured in terms of maintaining and improving environmental quality and protecting public health by fostering the protection and restoration of specific resource uses – such as drinking water supply, aquatic and wildlife habitat and propagation, and recreation – while sustaining economic activities that depend on natural resources (KDOW, 1997). The Framework includes five basic components: (1) basin management units, (2) a basin management cycle, (3) a statewide basin management schedule, (4) a partner network and public participation, and (5) basin and watershed management plans.

Activities are coordinated and focused within five basin management units: (1) Kentucky River; (2) Salt, and Licking rivers; (3) Upper and Lower Cumberland, Tennessee, and Mississippi; (4) Green and Tradewater rivers; and (5) Big Sandy, Little Sandy, and Tygarts. The five-part basin management cycle includes (1) scoping and data gathering, (2) assessment, (3) prioritization and targeting, (4) plan development, and (5) implementation. Under the statewide basin management schedule, each basin management unit will be sequenced over a five year period.

How to Use This Document

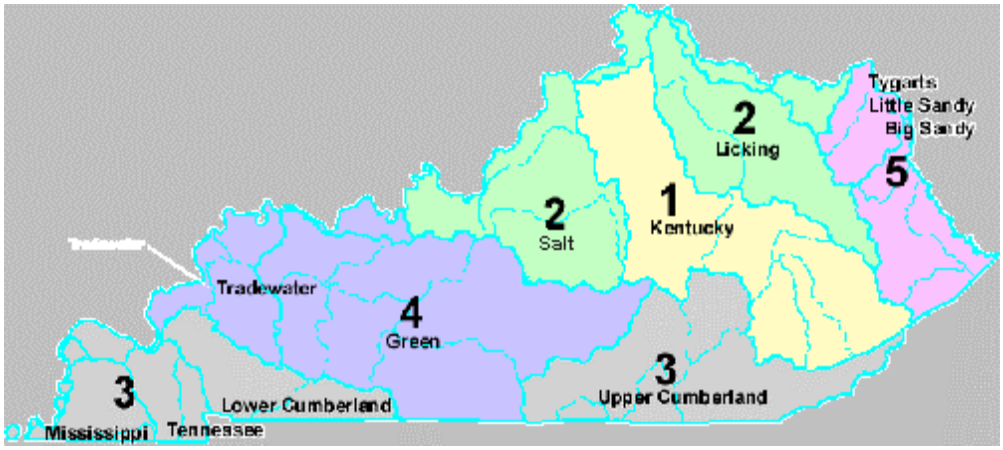
The success of this Framework depends in large part on effective local leadership groups (watershed task forces). These may be formed as a result of the Framework, or they may already exist, or they may be formed by a local group that steps forward to provide leadership. In any case, the Framework relies on such groups to develop a plan to address identified problems in a watershed. The purposes of watershed planning are to (1) clearly articulate the restoration and protection goals within the watershed, (2) identify who will be doing what, (3) identify time frames and milestones, and (4) identify funding sources and other resources needed for implementation.

This guidance document is organized to mirror the sections of a Watershed Action Plan and the sequence of activities in development of that plan. Many of the same resources will be useful in

making decisions during the planning process as in the implementation phase. Each section of this Guidance document should correspond to a section in your Action Plan and includes descriptions of related stages of the planning process.

The intended audience of this document is local watershed task forces to help them develop Watershed Action Plans. The organizational outline provides information on the type of information to include and resources that may be useful in the development and implementation of the plans.

Note that each section of this document contains a list and description of **resources**. These are not exhaustive lists but may provide a starting place when searching for the information you need. Specific names, addresses, contacts, phone and fax numbers, e-mail, and web site addresses (URLs) for many of the resources are listed in Appendix A of this document. A listing of funding sources is also provided in Appendix B, C & D. Partners in the Framework will help your group find other information you may need.



WATERSHED DESCRIPTION

Description of the Watershed

The first task of an Action Plan is to describe your watershed. Some or all aspects of your watershed description may already exist in other documents, such as your county's water supply plan or 201 Wastewater Facility Plan. You will need to carefully consider your short- and long-term goals and objectives for the watershed to determine where to put your emphasis and to identify the geographic scope of the plan. Taking on too large area can lead to frustration and progress that is too spread out to measure or document. By targeting a headwater watershed, you may have more control of the situation, be better able to measure success, and better concentrate your efforts. Once the scale and location of the project have been determined, you can begin describing the current conditions.

Some aspects of the watershed description will need to be more thorough than others, depending upon the issues of concern. For example, if your issue of concern is primarily straight pipes, untreated sewage, and fecal coliform bacteria contamination, you may not need to spend as much time describing the flora and fauna. On the other hand, if you are aiming to reduce sedimentation in the stream, you may be able to garner broader support and funding by emphasizing the aesthetic, biodiversity, and water quality benefits of the project. Thus, your watershed description may need to be more thorough to touch on all the issues that affect the outcome.

Again, it is important to utilize existing sources of information when possible. You may be able to obtain some general and technical information in the Basin Assessment Report that has been previously prepared for your basin. Check out the Kentucky Watershed Management at kywatersheds.org.

MAPS

Maps are important to any plan; they offer stakeholders a clear knowledge of where the watershed is, what key features exist in the watershed, and where activities will be targeted. The scale of your map will be dependent upon the scale of your project. Most projects need to occur at a scale of no larger than HUC 11* – smaller is better. Larger scale projects will make it harder to show results and harder to manage. The Kentucky Division of Water offers guidance on maps and may provide assistance in getting tools and data to make your own maps. At a minimum, your maps should indicate your watershed boundary and all pertinent waterbodies, county and city boundaries, special resources, drinking water supplies and intakes, KPDES permitted discharges, sanitation district boundaries, and other potential threats.

***Hydrologic Unit Codes (HUCs)** - HUCs were developed by the U.S. Geological Survey (USGS), the U.S. Department of Agriculture's Natural Resources Conservation Service, and others, to provide a standardized hydrologic or watershed boundary; these watershed boundaries are helpful when creating maps to indicate the drainage area and for data management purposes. All watersheds with named streams were identified on 1:100,000 scale maps, and then delineated on 1:24,000 scale maps. 6-digit HUCs are major river basins, such as the Kentucky, Salt, Licking, Green, etc. river basins. HUC6s are so-named because they have unique identifying codes with 6-digits for each basin or watershed. HUC8s are sub-watersheds within HUC6s; HUC11s are within HUC8s; and HUC14s are sub-watersheds within HUC11s. HUC watershed boundaries have been accepted by a number of agencies (e.g., U.S. Forest Service, USGS, EPA, NRCS, TVA, and Division of Water, to name a few) as the standard unit for watershed mapping. Their broad base of acceptance is the reason Kentucky has chosen HUC11-scale for targeting resources and watershed planning. These watershed boundaries may be found on the Natural Resources and Environmental Protection Cabinet's web site as a computer file for use in a geographic information system (GIS), or in the River Basin Team's assessment report, available (if completed). See: http://www.nr.state.ky.us/nrepc/ois/gis/ and kywatersheds.org. NOTE: HUC boundaries only relate to surface watersheds and may not conform to the actual drainage areas where there are underground flow patterns through cracks and solution channels in limestone bedrock (karst features).

GENERAL INFORMATION

- Describe the climate and other physical conditions in the watershed, especially as it relates to factors that will affect the problem, implementation, or long-term outcome of the project. For example, if siltation is a problem in your watershed, describe annual rainfall, soil types, average slopes, and degree of vegetation buffers along the stream banks.
- Describe any on-going management activities, such as fishery or wildlife management, fire management, lock and dam flow regulation, etc.
- Describe any other unique resources that may help in bringing other interests or resources to the project such as archaeological sites or recreational and scenic resources.
- Describe the local communities and cultural resources if these resources are to serve as a focal point for the project.
- Describe any public lands such as state or national forests, state or national parks, etc.

HYDROGEOLOGY

Describe the hydrogeology of your watershed. This information may be obtained from the Kentucky Geological Survey. It is important for design of the project and predicting the long-term success. For example, soil condition will have everything to do with how well on-site wastewater septic systems function or what type to install; or, in the case of a stream bank restoration, understanding and analyzing the hydro-geomorphic condition of the waterway is essential to any stream bank restoration project lasting beyond the project funding period. Some items to consider:

- Identify the soil types, underlying geology, rock strata, geologic structures, etc.
- Determine the predominant geological features in the region; i.e., is it karst geology? (Are there lots of caves and sinkholes?) Determine if the predominant flow patterns for the project area are determined by surface topography (does the water flow downhill to a stream?), sub-surface karst flow systems (does the water flow through sinkholes, cracks, and fissures in the underlying rock, then flow through subsurface streams?), or a combination of the two.
- Identify sinkholes, caves, springs, wetlands, and other sensitive features in the watershed.
- Describe any historical information on the watershed that may be relevant, such as channel changes, lakes and reservoirs or historical flooding or drought information.
- Describe any artificial diversions, stream alterations, channelization, dams, or other flood control structures.

BIODIVERSITY AND HABITAT

In this section, describe the flora and fauna, aquatic life, endangered species, and any special biological communities. The detail of this section will be dependent on issues and projects in your watershed. Contact the Kentucky Department for Fish and Wildlife Resources (KDFWR) or the Kentucky State Nature Preserves Commission regarding this information.

WATERSHED USES

Describe land and water uses in your watershed. We suggest using "Anderson Level II" classifications for land cover description. This GIS coverage is available on the Natural Resources and Environmental Protection Cabinet's web site. Other information to consider in evaluating the activities in the watershed include:

- Drinking water supply – source (river, reservoir, well, etc.), surface water vs. groundwater, potential contaminant sources, number of households served, etc. **Resources:** Kentucky Division of Water: Drinking Water and Water Resources Branches; Local Area Development Districts.
- Wastewater treatment – type (municipal/industrial/sector, major/minor), design or permitted capacity, receiving stream, etc. **Resource:** Kentucky Division of Water: Facilities Construction and KPDES Branches.
- Industry – type (sector code), location, pollutants discharged, percentage volume discharged to size of receiving waterbody, etc. **Resources:** Kentucky Business Directory; Kentucky Division of Water.
- Agriculture – number of operations, size (acres), productivity, type of crops / livestock, location, amount of fertilizer or pesticide applied; nutrient management practices, etc. **Resource:** U.S. Department of Agriculture, Kentucky Agricultural Statistics Service: http://www.nass.usda.gov/ky/kasshdr.htm.
- Residential – number of units, location, availability of water supply (public, well, cistern, etc.), wastewater treatment, etc. **Resources:** United States Census Bureau; Kentucky Division of Water: Water Resources (County Water Supply Plans) and Facilities Construction branches.

- Recreation and Tourism – camping, fishing, boating, hunting, hiking, or dollars in recreational tourism. **Resource:** Kentucky Tourism Development Cabinet.
- Local demographics and economics – population density, general income ranges. **Resources:** Kentucky Legislative Research Commission; United States Census Bureau; University of Louisville; Kentucky Business Directory.
- Planning & zoning – maps, ordinances, etc. **Resources:** City or county government; Local Area Development Districts.
- Regulatory use designations for streams within your river basin (designated in 401 KAR 5:026) Resource**:** Kentucky Division of Water: Water Quality Branch.

Note: Some of the above info may not be available on the watershed level.

RESOURCES

Use the following resources in developing a description of your watershed. Specific names, addresses, phone and fax numbers, and web sites are listed in Appendix A of this document.

Agency/Organization	Type of Assistance
Area Development Districts	Business, industry, economy, natural resources, tourism, government, GIS mapping and planning, legal issues, recreation planning, financial management and planning, and county water supply plans
Kentucky Department of Fish & Wildlife Resources	Habitat improvement
Kentucky Division of Conservation	Cooperative soil survey mapping, watershed conservancy districts
Kentucky Division of Water **Facilities Construction Branch** **Groundwater Branch** **KPDES Branch** **Nonpoint Source Section** **Water Quality Branch** **Water Resources Branch** **Drinking Water Branch**	 -201 Facility Plans for wastewater, wastewater treatment availability - Groundwater Protection Plans (GPPs) -KPDES permits, discharges, wastewater treatment -BMPs -Regulatory use designation of waterways -County water supply plans / drinking water supply -Drinking water facility information
Kentucky Tourism Development Cabinet	Number of fishing and hunting licenses, boating licenses; economic activity related to camping & hiking
Local Chamber of Commerce	Local industry, economics, and planning information
Local city or county government	Planning and zoning ordinances, maps, etc.

Local sanitation district	Wastewater treatment information and service area
Natural Resources Conservation Service and local Conservation Districts	Agricultural uses
U. S. Army Corps of Engineers	Hydrologic information, especially related to larger reservoirs
U. S. Environmental Protection Agency	Maps, databases, publications
Kentucky Legislative Research Commission	Economic and demographic data (Kentucky statewide summary information (updated 7/31/96), profiles of Kentucky counties, census profiles, Census of Agriculture Summaries, Bureau of Economic Analysis REIS data, civilian labor force estimates for Kentucky and counties, and commonly used boundaries in Kentucky)
United States Fish and Wildlife Service	Habitat conservation, endangered species, etc.
USDA, Kentucky Agricultural Statistics Service	Agricultural statistics (usually by county or census tract)
US Census Bureau	Private wells, demographics
University of Louisville	Growth and demographic information
United States Geological Survey (USGS)	Maps, hydrologic information

Water Quality of Your Watershed

The Kentucky Watershed Management Framework is a basin management cycle that includes assessment, prioritization, planning, and implementation. Information gathered under an interagency monitoring effort is interpreted and analyzed to evaluate and document the severity, extent, causes, and sources of stress to watershed resources. The results of coordinated monitoring efforts can provide invaluable information in locating and documenting problems in your watershed for funding purposes and to ensure funds are most effectively targeted.

Under Section 303(d) of the Clean Water Act, states are required to develop Total Maximum Daily Loads (TMDLs) for impaired water bodies. If the state has determined some waterbodies in your watershed are impaired, a TMDL may help you determine where to target control measures to eliminate the pollutant source. Basically, what this means is that a report may already exist (i.e. the TMDL report) that will help you identify the most significant sources of pollutants causing the impairments in your watershed. This, in turn, can help you in selecting and locating the most cost-effective solutions to your watershed impairment.

MONITORING DATA AND ASSESSMENTS

In this section of your plan, describe or reference monitoring results; also, reference current and planned monitoring efforts being performed locally. For example, some drinking water systems collect raw water samples. It would be helpful to include this information in your 11-digit HUC

watershed's Assessment Report, which is provided in year three of the Watershed Management Framework cycle. A complete listing of Outstanding Resource Waters, High Quality Waters (web address: http://www.lrc.state.ky.us/kar/401/005/026.htm), impaired waters (303[d]) (web address: http://water.nr.state.ky.us/303d/), TMDL development schedule (web address: http://water.nr.state.ky.us/303D/#tmdl), etc., may be found on the Internet or by contacting the Kentucky Division of Water, Water Quality Branch (see Appendix A).

TMDL REPORT

Cite and describe results of any Total Maximum Daily Load calculated for your watershed. The regulations define a TMDL as a quantitative assessment of pollutants that cause water quality impairments. A TMDL specifies the amount of a particular pollutant that may be present in a waterbody, allocates allowable pollutant loads among sources, and provides the basis for attaining or maintaining water quality standards. TMDLs are established for waterbodies and pollutant combinations for waterbodies impaired by point sources, nonpoint sources* or a combination thereof.

***Point Source Pollution vs. Nonpoint Source Pollution** – Water pollution can be divided into two general categories depending on the source of the pollutant. Most people can easily relate to point source pollution because it enters a waterbody at a definite location, such as a discharge pipe from a factory or wastewater treatment plant. Point sources are regulated by the Kentucky Pollutant Discharge Elimination System to minimize their effect on water quality. As a result, most of the water quality problems we experience today are the result of nonpoint source pollution. Nonpoint source pollution is also called runoff or diffuse pollution. This occurs when rainfall picks up natural and man-made pollutants and transports them into groundwater, streams, rivers, and lakes. The diffuse nature of nonpoint source pollution makes it difficult to isolate.

RESOURCES

In determining the water quality and identifying the sources of problems in your watershed, use the following resources. Specific names, addresses, phone and fax numbers, and web sites are listed in Appendix A of this document.

Agency/Organization	Type of Assistance
Kentucky Division of Water **Groundwater Branch** **KPDES Branch** **Water Quality Branch**	-Assistance with monitoring & assessment data -Assistance with TMDLs - Assistance with monitoring and assessment data, databases
Kentucky Watershed Watch	Volunteer sampling/monitoring coordinated through Watershed Steering Committees
U.S. Army Corps of Engineers	Assistance with monitoring & assessment data
United States Geological Survey	Assistance with monitoring & assessment data
Local Conservation Districts	Information on soil and water conservation, technical assistance, cooperative well testing

River Basin Team	Information and assistance
Local Sanitation Districts	Wastewater information
Local Water Supply Planning Councils	Information regarding quantity of supply with projections, delineations of supply area, and potential contaminated sites
River Network	Workshops, organizational and technical support, and consultation
United States Environmental Protection Agency	Guidance on monitoring, assessment, data collection and management
Universities	Assistance in interpreting monitoring results, determining priorities for action, etc.

Planning

Since there are many local, state, and federally mandated planning processes already in place, the last thing you want to do is superimpose yet another plan on top of it all. Unfortunately, however, because there are so many planning processes, and because each plan is focused on a different set of issues, it is not uncommon for the plans to conflict, overlap, contradict, or duplicate what the other is striving for. Ideally, when you set out to develop your watershed implementation plan, you should refer to other plans for background information – it may already be summarized for you. Or, you may find other projects that may impact your project; you could perhaps benefit from this other project by leveraging resources, or you may find you could be working at cross-purposes. Only by taking a larger view of all plans and relevant information can you really develop a fully integrated and workable watershed plan.

Some planning processes that could affect your project are listed below.

CURRENT PLANNING PROCESSES

Attach a summary or a copy of local plans, ordinances, etc. Examples of current planning processes include:

- *Certified Communities Partnership Program* – Kentucky Chamber of Commerce program to recognize communities with comprehensive local planning. **Resources:** Local or state chamber of commerce or Kentucky Chapter of American Planning Association.
- *County Water Supply Plan* – Long-range plan for adequacy of raw water supply and protection of drinking water. For more information see KRS 151.114-.118 and 401 KAR 4:220. **Resources:** Kentucky Infrastructure Authority, Division of Water, Water Resources Branch, local area development district, local public water system, or county government.
- *201 Wastewater Facility Plan* - Governs regional planning process for development of water quality control management plans to control point source pollution in a specified area. For more information see Clean Water Act Section 201 or 401 KAR

5:006. **Resources:** Division of Water, Facilities Construction Branch or local area development district.

- *Agricultural Water Quality Plan* – Agricultural operators plan to address environmental issues associated with agriculture and silviculture; establishes Best Management Practices for crops, livestock, pesticides, fertilizer, farmstead, silviculture, and streams and other waters. For more information see KRS Chapter 224.71. **Resources:** Division of Conservation or local NRCS office.
- *Groundwater Protection Plan (GPP)* - A document that establishes a series of practices designed to prevent groundwater pollution. For more information see 401 KAR 5:037. **Resources:** Division of Water's Groundwater Branch
- *Local Watershed Action Plan* (developed from this document);
- *Local Planning and Zoning, Land Use Plans* – Some counties may have these. For more information see KRS 100. **Resources:** Local government, local area development districts, Kentucky State Chapter of the American Planning Association
- *Empowerment Zones* - Selected project recipients that receive funds for economic, community, and human resource development. **Resources:** See Internet site: http://www.ed.gov/offices/OVAE/ezeccom.html.
- *NRCS Watershed Plan* - Project plans and programs dealing with conservation and usage of water resources, flood/erosion prevention and control, and floodwater and sediment damages. **Resources:** Natural Resources Conservation Service
- *Area Solid Waste Management Plan* - Develops goals and objectives for improving solid waste management. For more information see 401 KAR 49:011. **Resources:** local solid waste coordinator or county judge executive's office.

Note: See Appendix A for resource contact information.

Identifying Goals and Objectives

TARGETING YOUR PROJECT

After all readily available data on a river basin has been gathered, the Framework Partners prepare a Monitoring Report and an Assessment Report for the basin. These reports provide the basis for the River Basin Team to select and target their Priority Watersheds within the basin. Factors to be considered include analytical data, technical considerations and feasibility, programmatic constraints, political feasibility, and cost-effectiveness.

Local input in this process is critical. It can help determine the availability of state and federal funding and other resources to your watershed. That is, if your watershed can demonstrate strong local support and good organization, the River Basin Team may select your watershed for priority action and funding. If you already have a well-thought-out plan, you'll be better prepared to influence this process.

Once priority watersheds have been identified, available resources are targeted toward those priority watersheds to solve particular problems.

A local watershed task force will then be asked to identify, evaluate, and select management strategies in subwatersheds for specific issues. Targeted issues might include straight pipes and sewage, agricultural runoff, or regulated industry. The watershed management framework assessment report for a river basin will provide information about the sources of problems that were identified through strategic monitoring (305[b] Data). However, local knowledge is invaluable. It is **crucial** that the local watershed task force include people who are knowledgeable about and directly connected to the activities that impact the watershed's problems.

The nucleus work group of a local watershed task force may be any group with primary responsibility for, or a stake in, the issue of concern. For example, if the issue relates to wastewater treatment, the sanitation district should play a lead role; if the issue is agriculturally related, the conservation district should be a lead player; if drinking water supply is the concern, then the Water Management Planning Council should be a lead player; etc. However, in order for these projects to be successful, it is strongly recommended that the makeup of the task force be expanded to provide a balanced view so that all angles of the problem are considered. For example, landowners or permittees that may be affected by the plan should certainly be included from the onset – you will get much better cooperation and support if they are brought in at the beginning stages of your project.

The task force then prepares a Watershed Action Plan that outlines specific implementation strategies, funding sources, and timelines to guide the efforts of Framework partners to resolve the problem. Partners must work together to face problems and find solutions.

If your particular watershed has been identified by the River Basin Team as a "priority watershed," the team will help bring assistance and resources to your project.

Watersheds selected by the Framework's River Basin Team will receive support through the participating agencies. **However, whether or not your watershed has been selected as a priority watershed, the development of a Watershed Action Plan is a good idea.** The purpose of this section of your Action Plan should be to identify which issues and areas within your watershed will be the focus of your efforts.

Just as the River Basin Team must consider many issues in selecting priority watersheds, you must balance cost-effectiveness, willingness of residents, political support, data availability, funding, and technical feasibility in selecting your project or project area(s).

DESCRIPTION OF GOALS AND OBJECTIVES

Once you have identified the area of concern and targeted your project area, the next step is to clearly articulate your goals and objectives. What does the task force want to accomplish? What is the future desired condition of the watershed: water supply, farmland, or natural resources?

This must be clearly articulated so that everyone on the task force and other residents has a common vision of where the plan is headed. Objectives and goals must be tailored to available resources and to the nature of the problem.

Goals define the overall direction or purpose of the project. Objectives describe final results. Establish goals that will be understood by all, and are measurable and achievable. An example of a workable goal might be "to meet water quality standards by 2002".

Objectives provide milestones to be met during the course of a project. Establish quantitative objectives that provide a way to measure progress. Set specific objectives early with assistance from local agencies, project participants, and community representatives. An example of a specific objective is "reduce fecal coliform in the Home Town Creek by 50 percent."

RESOURCES

The following resources may be useful in setting goals and objectives. Specific names, addresses, phone and fax numbers, and web sites are listed in Appendix A of this document.

Agency/Organization	Type of Assistance
Kentucky Long-term Policy Research Center	Research, data analysis, policy making, long-term strategic planning, resource coordination
Local Conservation District offices	Workshops, organizational and technical support, resource concerns and needs
University of Kentucky Cooperative Extension Service	Seminars, workshops, short courses, etc.
Kentucky Waterways Alliance	Local watershed experience, workshops, seminars and consulting
River Network	Workshops, organizational and technical support, and consultation

SOLUTIONS / PLAN IMPLEMENTATION

After describing the watershed and setting goals and objectives, it is time to explore, select, and implement specific actions to resolve the problems. The plan of action will need to address specific problems in the watershed, yet each aspect of the plan must take into account the inter-relatedness of the other aspects. Care should be taken so that one solution does not create another problem.

This Guide is organized by issues for presentation purposes, and it may be appropriate that your implementation plan be structured in a similar manner; however, given the inter-relatedness of some issues, this may not be practical.

For example, some actions may meet multiple objectives. Restoration of the riparian corridor may provide aesthetic value, limit sedimentation, and reduce nutrient runoff. What is important is to ensure clear organization and communication and clarify who does what, when, and where. All resources, responsible parties, and funding should be clearly identified.

By following the overall organization of this planning guide, you can better insure that the background information is available to plan your implementation strategy and many interrelated issues will be addressed. As you plan for each issue, be sure to address the following items under each goal and objective:

Example:

Goal 1: state goal – provide explanation and background information necessary

Objective 1: state and explain objective

Action 1: Some background information may be useful to describe problems being addressed by this action

What: What will be done?

Resources needed: This should identify funding and funding sources, and anything else needed to get the job done.

When: When will it be done? This may include information milestones and a funding date.

Who: Who is responsible? This may include a committee or team, but a lead person should be identified.

Where: If the scope of the project is limited or needs clarification, then do this here.

Other Comments:

Action 2: etc.

This outline should be repeated for each goal and objective that you intend to address through this planning process.

In order to complete your goals and objectives you will need to identify solutions that will address the issues you have selected. Solutions may vary widely depending on the source of the problem. In some cases more education may be necessary before actual implementation can occur. Enforcement and permitting may be concerns in areas where point source pollution is a problem. Or your task force may feel it needs more training or assistance before selecting possible solutions. The following sections will provide information and resources to assist your task force in choosing and implementing solutions.

Conservation/Best Management Practices (BMPs)

This section addresses best management practices for the following sectors:

- Agriculture
- Silviculture/Forestry

- Mining
- Construction

The following resources may help with development and implementation of best management practice options. Specific names, addresses, phone and fax numbers, and web sites are listed in Appendix A of this document.

Agency/Organization	Type of Assistance
Agriculture Water Quality Authority, *contacted through the Kentucky Division of Conservation*	Agriculture & Silviculture Best Management Practices
Kentucky Department of Fish and Wildlife Resources	Seed distribution, warm season grass drills, tree and acorn planters
Kentucky Department of Agriculture	Pesticide BMPs, Pesticide Rinse and Return Recycling Program, Pesticide Collection and Disposal
Kentucky Department for Surface Mining Reclamation and Enforcement,	Surface mining BMPs
Kentucky Division of Water **Groundwater Branch** **Nonpoint Source Section** **Water Quality Certification Section** **Water Resources Branch**	• Wellhead Protection, GPPs • Silviculture BMPs, Construction BMPs, Agriculture BMPs • Streambank erosion BMPs • Source Water Protection
KY Pollution Prevention Center	Industry BMPs, construction BMPs
USDA Natural Resource Conservation Service and USDA Farm Services Agency	Ag BMPs, conservation planning
Kentucky Division of Forestry	Silvicultural BMPs, tree planters
Local Conservation Districts	Ag, silviculture, and construction BMPs; specialized equipment, BMP implementation; cost share for BMPs
Kentucky Division of Conservation	Agriculture, silviculture, and construction BMPs; specialized equipment, BMP implementation
University of Kentucky Cooperative Extension Service	Publications on agricultural and silvicultural BMPs
University of Kentucky Department of Forestry	Master Logger program
U. S. EPA, Center for Watershed Protection	Urban Planning and Development, Runoff
U.S. Forest Service	Silviculture BMPs
Office of Surface Mining	Surface mining BMPs

Land Preservation

One of the ultimate tools for watershed protection is land preservation. Preservation is established when the land is protected from further development and resource use. The process usually involves purchase of the land from a private landowner by a preservation agency or organization. Preservation efforts are typically targeted to parcels of land that have not been greatly disturbed and/or which possess ecological importance.

The following resources may assist in land preservation efforts. Specific names, addresses, phone and fax numbers, and web sites are listed in Appendix A of this document.

Agency/Organization	Type of Assistance
Kentucky Department of Fish and Wildlife Resources	Habitat improvement, acquire natural areas as funds allow
Kentucky State Nature Preserves Commission	Database of rare species occurrences and natural areas, acquire natural areas as funds allow
The Bluegrass Conservancy	Legal, educational, and technical support; preservation planning
Trust for Public Land	Training, technical assistance, and fund raising for land conservation; green space planning; land acquisition assistance
The Nature Conservancy	Determine if rare species or unique natural communities are present; acquire natural areas as funds allow
United States Fish and Wildlife Service	Endangered species, invasive species, habitat conservation, acquire natural areas as funds allow

Training/Education/Technical Assistance

Training and education are keys to implementation of your Watershed Action Plan. Training and educating local partners will allow you to develop and implement an effective outreach plan. Technical assistance is available for evaluating and solving watershed problems.

You may want to let people know what problems the professionals have found in the watershed. It will also be beneficial to find out about the concerns of other people in the watershed. It is important to clearly link problems and concerns to issues your audience cares about, such as higher drinking water costs, poor fishing, no swimming, or fewer tourists. Then motivate people to action and provide mechanisms for citizens to participate as full partners in the process of analyzing, improving, and managing your watershed.

There are many good resources available to help with your education campaign. But before you embark on the campaign, you must go back to your originally stated goals and objectives. Then ask your self a few key questions:

1. What is your message and how will it relate to others' concerns? Remember to keep your message simple and consistent.
2. Who is your target audience? Who lives in the watershed boundary that you have chosen to target? Who is affected? How are they affected?
3. What will be your strategy for communicating this message to this audience? i.e., What people, media, or mechanism will you use to get your message out? Will several forms of communication be necessary to reach a diverse audience? How knowledgeable is your audience about the issue you are communicating? How will you overcome any communication barriers: education, culture, socioeconomic, etc.

The following resources may provide assistance and information regarding training and education. Specific names, addresses, phone and fax numbers, and web sites are listed in Appendix A of this document.

Agency/Organization	Type of Assistance
Conservation Technology Information Center	Information about environmentally beneficial and economically viable management practices for ag, urban, and other watershed stakeholders
Kentucky Department of Agriculture	Partners for Wetland Wildlife, coal mining technical guidance, teacher training workshop
Kentucky Department of Fish & Wildlife Resources	Aquatic education, conservation camps and education for school children; habitat management education
Kentucky Division of Conservation	Essay and poster contests, conservation education and outreach programs, Envirothon, ag water quality training and education
Kentucky Division of Forestry	Forest Stewardship Program, forest management assistance
Kentucky Division of Forestry / U.K. Department of Forestry	Master Logger Program, Project Learning Tree, 4-H Wildlife Habitat Evaluation Program
Kentucky Division of Water **Enforcement Branch** **Nonpoint Source Section** **Water Quality Branch** **Water Watch**	Comprehensive Technical Assistance Program (CTAP), operator training -Outreach, education -Technical assistance to develop management plans for the land within a Wild River corridor -Volunteer water quality monitoring, community education, leadership development, and community organization
Kentucky Environmental Education Council	Advice and technical assistance, education

	events, coordination, resource database
Kentucky Farm Bureau, Agriculture Watershed Awareness Program	Volunteer water quality monitoring, community education, leadership development, community organization, landowner involvement, and education
Local Conservation Districts	Outreach, education, technical assistance
Natural Resources Conservation Service	Forest Stewardship Program, forest management assistance, technical assistance and education for farm and watershed level conservation planning
National Small Flows Clearinghouse	Wastewater information and assistance
National Environmental Training Center for Small Communities	Training assistance and referral information regarding drinking water, wastewater, and solid waste
River Network	Workshops, organizational and technical support, and consultation
Center for Watershed Protection	Capacity building, education, workshops, training
U. S. Environmental Protection Agency	Outreach, education, partners
United States Fish and Wildlife Service	Conservation training, endangered species, invasive species, habitat conservation
University of Kentucky Cooperative Extension Service	Educational information and assistance on agriculture, community development, 4-H
Universities	Educational and technical assistance
Kentucky On-Site Wastewater Association	Public and technical education, technical assistance with on-site wastewater issues
Kentucky Pollution Prevention Center	Education, training, technical assistance, on-site assessment, research
Kentucky Rural Water Association	Training, technical assistance, advocacy
Kentucky Water and Wastewater Operators Association	Water and wastewater operator training and certification, information regarding new technology
Kentucky Watershed Watch	Volunteer sampling and monitoring coordinated through river basin local steering committees
Kentucky Association for Environmental Education	Technical assistance, education events and outreach
Council of State Governments	Author of *Getting In Step – A guide to Effective Outreach in Your Watershed*
Kentucky River Authority	Kentucky River Basin cleanup
Kentucky Waterways Alliance	Networking, education, outreach, technical assistance

Monitoring/Assessment

Most of the watersheds to be targeted for action under your action plan probably already have documented problems. As such, collection of baseline data is simply a matter of compiling existing documents and data. As stated before, this information can help you in targeting your project for greatest benefit. However, if there are no existing data, you will need to document the existing, pre-action, conditions of the watershed.

Why is monitoring data important? First of all, good data can help you determine where to best place water quality controls for the greatest effectiveness and least cost. Secondly, pre- and post-monitoring data can help you determine if your project has had an effect or if you need to adjust the control structures. Depending upon your stated goals and objectives, you will need some way to measure whether you have achieved your objectives or not. There may be numerous qualitative or subjective measures to show progress or success. However, a quantitative, scientifically defensible set of monitoring data collected before and after implementation has several benefits:

- Some funding sources require it.
- The data provide greater credibility and confidence in your project and organization.
- You can better monitor progress, which can aid in mid-course corrections of a project, if necessary, and avoid spending time and money on actions that have little or no benefit.
- The data also can provide documentation of compliance with some state and federal regulations.

ANALYSIS OF EXISTING DATA

One of the first planning activities you should undertake is to collect all available water quality data for your watershed as advised in Chapter 1, Section B of this document. Using this data you will be able to identify the impairments that affect your watershed. You will also need to identify all of the potential sources of the impairments. So the question you should ask yourself is this: After reviewing all the available data, are you able to determine the specific locations of the pollutant sources? In some cases the data may be sufficient to lead you to the source(s) and allow you to target your BMPs.

Sometimes the available data may not be sufficient to pinpoint problems in a watershed. Nonpoint source pollutants can be particularly difficult to identify. This can make implementing solutions nearly impossible. For example, data may indicate a nutrient problem at a sample location near the bottom of an 11-digit HUC watershed. The source of the nutrients may be widespread or it may be isolated to a small area or specific tributary within the watershed. So where should you focus your efforts? This can be a difficult question to answer and may require additional monitoring to isolate the problems. If a TMDL (total maximum daily load) has been developed for this watershed, this information should be consulted and may help answer this question.

PLANNED MONITORING

You will also need to describe monitoring efforts you plan to perform as a part of your project. Consult the following for guidance on developing a monitoring strategy to assess progress with your project:

- QA/QC plan – see the Department for Environmental Protection's plan
- Basin Monitoring Strategy – Under the Watershed Management Framework, a monitoring strategy is completed for each basin. This strategy describes what information will be (or has been) collected for your basin by the various state and federal agencies. It is organized in a way that may help you in the development of your monitoring strategy and where to complement existing monitoring resources. Key items to consider, include:

    - **Sites to sample**: be sure your sampling locations are up gradient and down gradient of your project area. Examples: if placing BMPs on a farm, you should sample upstream and downstream of the implementation site so you can document improvements as a result of your actions.
    - **Parameters**: list parameters of concern.
    - **Sampling regime**: monthly, with rain events or as needed to document progress?
    - **Duration**: one year, two years, etc.?
    - **Who:** who will do sampling?
    - **Media**: biology, water, sediment/soil, fish tissue, vegetation, wildlife, etc.

RESOURCES

The following resources may be utilized in monitoring and assessment. Specific names, addresses, phone and fax numbers, and web sites are listed in Appendix A of this document.

Agency/Organization	Type of Assistance
Commercial Laboratories / Consultants	Obtain lists from Division of Water
Kentucky Division of Water, Water Quality Branch	Collect and assess physiochemical and biological data, review water quality impacts, on-site evaluations, education
Kentucky Watershed Watch	Volunteer sampling and monitoring coordinated through river basin local steering committee
Kentucky Division of Water, Water Watch	Volunteer water quality monitoring, community education, leadership development, and community organization
Tennessee Valley Authority	Can do some monitoring, provide technical assistance, and data analysis
Ohio River Valley Water Sanitation Commission (ORSANCO)	Can do some monitoring, provide technical assistance, and data analysis
KY Farm Bureau, Agriculture Watershed Awareness Program	Volunteer water quality monitoring, community education, leadership development, community organization, landowner

	involvement and education
US Fish & Wildlife Service	Can do some monitoring, provide technical assistance, and data analysis
KY Fish & Wildlife Resources	Can do some monitoring, provide technical assistance, and data analysis
National Park Service	Can do some monitoring, provide technical assistance, and data analysis
US Forest Service	Can do some monitoring, provide technical assistance, and data analysis
US Army Corps of Engineers	Can do some monitoring, provide technical assistance, and data analysis
KY Nature Preserves Commission	Can do some monitoring, provide technical assistance, and data analysis
Local sewer/sanitation districts	Can do some monitoring, provide technical assistance, and data analysis
Local health departments	Can do some monitoring, provide technical assistance, and data analysis
United States Geological Survey	Real-time water data, drought information, mapping, stream flow data
Universities	Information, technical assistance, laboratories, research

Permitting/Compliance and Enforcement

STATUTES

The most recently published Kentucky statutes are available on the Internet and are located at http://www.lrc.state.ky.us/statrev/frontpg.htm .

REGULATIONS

The Legislative Research Commission also maintains Kentucky regulations in effect as of the 15th of the previous month on its' web site, at http://www.lrc.state.ky.us/kar/frntpage.htm. Federal regulations are available on the Internet at http://www.access.gpo.gov/su_docs/aces/aces140.html.

PERMITTING

ROLE OF PERMITTING IN WATERSHED MANAGEMENT

Residents, businesses, and industries may have local, state, and/or federal permits for activities such as floodplain activities, wastewater treatment plants, water withdrawals, construction sites, and water discharges. Permits can help you locate potential partners as well as potential

pollutants. Permit limits and conditions may assist in watershed management. Local watershed task force members may want to participate in public hearings and meetings.

KPDES WATERSHED PERMITTING

Kentucky has been in the process of watershed permitting since 1997. KPDES permits have been issued/reissued and cycled into one of five basin management units. Starting in July 2001, KPDES permits will be issued on a watershed basis referred to as watershed permitting. As permits expire they will be timed to expire in the watershed permitting year.

The five basin management units and the scheduled watershed permitting (done on a state fiscal year basis) are as follows:

1. Kentucky River - July 1, 2001 to June 30, 2002
2. Salt and Licking Rivers - July 1, 2002 to June 30, 2003
3. Upper and Lower Cumberland and Tennessee Rivers - July 1, 2003 to June 30, 2004
4. Green and Tradewater Rivers - July 1, 2004 to June 30, 2005
5. Big Sandy, Little Sandy, and Tygarts Rivers - July 1, 2005 to June 30, 2006

Permits will be processed in a "domino-like" fashion within a basin management unit. In this manner, permits for small watersheds within the larger basin management unit will all be processed within the same time period (eg. week, month, etc). The process will continue all the way through the basin by proceeding to each successive sub-basin. This allows the agency to have more focused attention on technical reviews of KPDES permits.

In addition to the above, public involvement should be enhanced as a result of watershed permitting. Groups of permits will be public noticed concurrently in order that public participation can be conducted and coordinated on a local level. In some situations, public hearings may be conducted for multiple permitted entities rather than one permit at a time.

The Division of Water maintains a listing of KPDES permits to be processed and when each is set for review within each respective basin management unit for a given state fiscal year.

Any questions regarding the Division's watershed permitting process can be directed to the KPDES Branch at (502) 564-3410.

COMPLIANCE AND ENFORCEMENT

Each local watershed task force must work closely with its Division of Water (DOW) Regional Office in matters of compliance and enforcement. If the local watershed task force identifies problems or violations, it should notify the appropriate DOW Regional Office or the DOW Complaints Coordinator listed in Appendix A.

Inspectors will investigate the matter and can issue a Notice of Violation or a Letter of Warning to the responsible party if a violation of regulation/statute is discovered. The Natural Resources and Environmental Protection Cabinet has the ability to negotiate agreed orders, assess civil penalties,

take administrative action through the administrative hearing process and/or take the matter to circuit court in order to resolve a cited violation. The Cabinet is supported by the Office of Legal Services. Gary Levy is the manager of the Division of Water's Enforcement Branch.

RESOURCES

The following resources may assist in permitting and enforcement. Specific names, addresses, phone and fax numbers, and web sites are listed in Appendix A of this document.

Agency/Organization	Type of Assistance
City and County Government	Create local ordinances
County, circuit and district courts	Arena to hear litigation on violations
Kentucky Division of Water	Information regarding the agency's statutes, regulations, and permitting
KY Division of Water Regional Offices	Handles complaints, inspections, compliance
Legislators	Represent citizens
Kentucky Legislative Research Commission	KY General Assembly Directory, Regulations, etc.
U. S. Environmental Protection Agency	Federal regulations

Funding

GRANTS, COST-SHARE PROGRAMS, LOANS

Clearly document the water quality impairment or threat and the sources of the problem before trying to address the problem. Choosing a viable project, documenting the problem, defining objectives and goals, involving the community, obtaining funding, clarifying roles, defining critical areas, and assessing project effectiveness are all part of implementing a successful pollution control project.

RESOURCES

Many funding sources are available for watershed improvement projects. **Appendix B** lists Internet addresses for various funding agencies and organizations. **Appendix C** lists more detailed information for funding sources, including addresses, phone numbers, types of projects funded, grant amounts, eligibility information. **Appendix D** lists other funding resources and publications.

APPENDIX A: RESOURCE INFORMATION

RESOURCES

Agency / Organization	Address	Contact Person	Phone Number	FAX Number	E-Mail Address	Internet Address
The Bluegrass Conservancy	Dudley Square 380 South Mill St. Suite 1-I Lexington, KY 40508-2560	Margaret M. Graves, Executive Director	(859) 255-4522	(859) 255-7952	BGConserve@aol.com	www.bluegrassconservancy.org
Center for Watershed Protection	8391 Main Street Ellicott City, MD 21043-4605	Tom Schueler, Executive Director	(410) 461-8323	(410) 461-8324	center@cwp.org	http://www.cwp.org/
Conservation Technology Information Center	1220 Potter Dr. Rm. 170 West Lafayette, IN 47906		(765) 494-9555	(765) 494-5969	ctic@ctic.purdue.edu	http://www.ctic.purdue.edu/CTIC/CTIC.html
Council of State Governments	2760 Research Park Drive P.O. Box 11910 Lexington, KY 40578-1910	Karen Marshall	(859) 244-8000	(859) 244-8001	info@csg.org	www.csg.org
Kentucky Agricultural Statistics Service	P.O. Box 1120 Louisville, KY 40201	Leland Brown, State Statistician	(800) 928-5277		nass-ky@nass.usda.gov	http://www.nass.usda.gov/ky/kasshdr.htm
Kentucky	380 King's	Mike Magee,	(502) 223-	(502) 875-7262	jmmeyer@kaco.org	www.kaco.org

Agency / Organization	Address	Contact Person	Phone Number	FAX Number	E-Mail Address	Internet Address
Association of Counties	Daughters Drive Frankfort, Ky. 40601	Executive Director Gail Mitchell, Customer Services Representative	7667			
Kentucky Association for Environmental Education	P.O. Box 176055 Covington, KY 41017	Karen Reagor, Executive Director	(859) 578-3012		Kpreagor@aol.com	www.kaee.org
Kentucky Business Directory	5711 South 86th Circle P.O. Box 27347 Omaha, NE 68127		(402) 593-4600	(402) 331-5481	directory@abii.com	http://www.SalesLeadsUSA.com
Kentucky Cabinet for Health Services, Division of Public Health Protection and Safety	275 East Main Street - 4WA Frankfort, Ky. 40601	John H. Morse, Secretary	(502) 564-7130	(502) 564-3866		http://cfc-chs.chr.state.ky.us/
Kentucky Cabinet for Natural Resources and Environmental Protection	Capital Plaza Tower 5th Floor Frankfort, KY 40601	James E. Bickford, Secretary	(502) 564-3350	(502) 564-3354	bickford@nrepc.nr.state.ky.us	www.state.ky.us/agencies/nrepc/nrhome.htm
Kentucky Chamber of Commerce	P.O. Box 817 Frankfort, KY 40602		(502) 695-4700	(502) 695-6824	kjohnson@kychamber.com	http://www.kychamber.com/
Kentucky Chapter of American Planning		Tim Butler, Chapter President	(502) 348-9120	(502) 348-1285	Tbutler@bardstown.com	www.kapa.org

Agency / Organization	Address	Contact Person	Phone Number	FAX Number	E-Mail Address	Internet Address
Association						
Kentucky Council of Area Development Districts (ADD)	Burlington Center Office Park 113-A Consumer Lane Frankfort, Ky. 40601-8489	James M. Everett, Information Director	(502) 875-2515	(502) 875-0946	kycadd@aol.com	http://www.louisville.edu/cbpa/sdc/addgraph.html
Kentucky Department of Agriculture, Division of Pesticides	100 Fair Oaks Lane, Floor 5 Frankfort, KY 40601	John McCauley, Director	(502) 564-7274	(502) 564-3773	John.McCauley@kyagr.com	http://www.kyagr.com/enviro_out/pesticide/index.htm
Kentucky Department of Surface Mining Reclamation and Enforcement	2 Hudson Hollow Frankfort, KY 40601-4321	Carl Campbell, Commissioner	(502) 564-6940	(502) 564-5698		http://kydsmre.nr.state.ky.us/
Kentucky Department of Transportation, Division of Environmental Analysis	1st Floor, State Office Building Annex 125 Holmes Street Frankfort, KY 40601	David Waldner, Director	(502) 564-7111 or (800) 280-2498	(502) 564-4911		http://www.kytc.state.ky.us/info/envaff.htm
Kentucky Department of Fish and Wildlife Resources	Arnold L. Mitchell Building #1 Game Farm Road Frankfort, Ky.	Tom Bennett, Commissioner	(502) 564-4336 or (800) 858-1549	(502) 564-0506	info.center@mail.state.ky.us	http://www.kdfwr.state.ky.us/

Agency / Organization	Address	Contact Person	Phone Number	FAX Number	E-Mail Address	Internet Address
	40601					
Kentucky Department for Environmental Protection (DEP), Commissioner's Office	14 Reilly Road Frankfort, KY 40601	Robert Logan, Commissioner	(502) 564-2150	(502) 564-4245	Robert.Logan@mail.state.ky.us	http://www.nr.state.ky.us/nrepc/dep/dep2.htm
Kentucky DEP, Division for Air Quality	803 Schenkel Lane Frankfort, KY 4060l-1403	John Hornback, Director	(502) 573-3382	(502) 573-3787	john.hornback@mail.state.ky.us	http://www.nr.state.ky.us/nrepc/dep/daq/daqhome.html
Kentucky DEP, Division of Waste Management	14 Reilly Road Frankfort, Kentucky 40601	Robert H. Daniell, Director	(502) 564-6716	(502) 564-4049	Daniell@nrdep.nr.state.ky.us	http://www.nr.state.ky.us/nrepc/dep/waste/dwmhome.htm
Kentucky DEP, Division of Water	14 Reilly Road Frankfort, KY 40601	Jack A. Wilson, Director; Lee Colten, Watershed Coordinator	(502) 564-3410	(502) 564-4245	Lee.Colten.mail.state.ky.us	http://water.nr.state.ky.us/dow/dwhome.htm
Kentucky Department of Natural Resources (DNR), Commissioner's Office	663 Teton Trail Frankfort, KY 40601	Hugh Archer, Commissioner	(502) 564-2184	(502) 564-6193	hugh.archer@mail.state.ky.us	http://www.nr.state.ky.us/nrepc/dnr/ComOff.html
Kentucky DNR, Division of Forestry	627 Comanche Trail Frankfort,	Leah Macswords, Director	(502) 564-4496	(502) 564-6553	Leah.Macswords@mail.state.ky.us	http://www.nr.state.ky.us/nrepc/dnr/forestry/dnrdof.

Agency / Organization	Address	Contact Person	Phone Number	FAX Number	E-Mail Address	Internet Address
	Kentucky 40601					html
Kentucky DNR, Division of Conservation	663 Teton Trail Frankfort, KY 40601	Stephen A. Coleman, Director	(502) 564-3030	(502) 564-9195	Steve.Coleman@mail.state.ky.us	http://www.nr.state.ky.us/nrepc/dnr/Conserve/doc2.htm#STFF
Kentucky Directory Gold Book	Clark Publishing, Inc. P.O. Box 24766 Lexington, KY 40524		(800) 944-3995	(606) 233-7421	clarkpub@mis.net	www.CLARKPUBLISHING.com
Kentucky Environmental Education Council	1705 Capital Plaza Tower Frankfort, Kentucky 40601	Jane Eller, Executive Director	(800) 882-5271 or (502) 564-5937	(502) 564-6952	jane.eller@mail.state.ky.us	http://www.state.ky.us/agencies/envred/
Kentucky Environmental Quality Commission	14 Reilly Road Frankfort, Kentucky 40601	Leslie Cole, Director	(502) 564-2150	(502) 564-4245	Leslie.cole@mail.state.ky.us	http://www.kyeqc.net/
Kentucky Geological Survey	228 Mining and Mineral Resources Building University of Kentucky Lexington, Kentucky 40506-0107		(606) 257-5500	(606) 257-1147		http://www.uky.edu/KGS/home.htm
Kentucky Infrastructure	Suite 261, Capitol Annex	Roger Recktenwald,	(502) 564-2090	(502) 564-7943	Roger.Recktenwald@ofmea.fi.state.ky.	http://kymartian.state.ky.us/kia/

Agency / Organization	Address	Contact Person	Phone Number	FAX Number	E-Mail Address	Internet Address
Authority	702 Capitol Avenue Frankfort, KY 40601-3448	Executive Director			us	
Kentucky League of Cities	101 East Vine St., Suite 600 Lexington, KY 40507-3700	Sylvia Lovely, Executive Director, CEO	(606) 323-3700 or 1-(800) 876-4552	(606) 323-3703	sylvia@klc.uky.edu	http://www.klc.org
Kentucky Legislative Research Commission	Room 300 State Capitol Frankfort, KY 40601	Peggy Hyland	(502) 564-8100	(502) 223-5094	peggy.hyland@lrc.state.ky.us	http://www.lrc.state.ky.us/
Kentucky Long-Term Policy Research Center	111 St. James Court Frankfort, KY 40601	Michael Childress, Executive Director	(502) 564-2851 or (800) 853-2851	(502) 564-1412 or (800) 383-1412	info@kltprc.net	http://www.kltprc.net/
Kentucky Onsite Wastewater Association, Inc.	P.O. Box 253 Springfield, KY 40069	Joey Purdom, President	(859) 336-0896	(859) 336-0896	kowa2@hotmail.com	
Kentucky Pollution Prevention Center	420 Lutz Hall Louisville, KY 40292	Cam Metcalfe, Exective Director	(502) 852-0965 or (800) 334-8635 ext. 9065	(502) 852-0964	info@kppc.org	http://www.kppc.org/
Kentucky River Authority	70 Wilkinson Boulevard Frankfort, Kentucky 40601	Steven Reeder, Executive Director	(502) 564-2866	(502) 564-2681	Stephen.Reeder@mail.state.ky.us	http://www.nr.state.ky.us/nrepc/kra/page1.htm
Kentucky Rural Water Association	P.O. Box 1424 Bowling Green,	Gary Larimore	(270) 843-2291	(270) 796-8623	krwa@kih.net	http://www.krwa.org/

Agency / Organization	Address	Contact Person	Phone Number	FAX Number	E-Mail Address	Internet Address
	KY 42102-1424					
Kentucky State Nature Preserves Commission	801 Schenkel Lane Frankfort, Ky. 40601	Donald Dott, Executive Director	(502) 573-2886		Don.Dott@mail.state.ky.us	www.kynaturepreserves.org
Kentucky Tourism Development Cabinet	500 Mero St. #2400 Frankfort, KY 40601	Ann Latta, Secretary	(502) 564-4270		Ann.latta@mail.state.ky.us	www.state.ky.us/tour/latta.htm
Kentucky Water and Wastewater Operators Association	718 Clifford Drive Elizabethtown, KY 42701	Gary Crabtree, Chairman	(502) 624-1254		none	none
Kentucky Water Resources Research Institute	233 Mining And Minerals Resources Bldg. University Of Kentucky Lexington, Ky 40506-0107	Jim Kipp, Director	(606) 257-1299	(606) 323-1049	kipp@pop.uky.edu	http://www.uky.edu/WaterResources/
Kentucky Waterways Alliance	854 Horton Lane Munfordville, KY 42765-8135	Judith Petersen, Executive Director	(270) 524-1774		Director@kwalliance.org	http://www.kwalliance.org
National Environmental Training Center for Small Communities	National Environmental Sercvices Center Box 6064 West Virginia		(800) 624-8301	(304) 293-3161		www.nesc.wvu.edu/netcsc/netcsc.index.htm

Agency / Organization	Address	Contact Person	Phone Number	FAX Number	E-Mail Address	Internet Address
	University Morgantown, WV 26506-6064					
National Small Flows Clearinghouse	NSFC WVU Research Corporation West Virginia University P.O. Box 6064 Morgantown, WV 26506-6064		(800) 624-8301	(304) 293-3161		www.nsfc.wvu.edu
The Nature Conservancy	642 W. Main St. Lexington, KY 40508	James Aldrich, State Director	(859) 259-9655	(859) 259-9678		www.tncky.org
Ohio River Valley Water Sanitation Commission (ORSANCO)	5735 Kellogg Avenue Cincinnati, Ohio 45228	Alan Vicory, Executive Director	(513) 231-7719	(513) 231-7761	info@orsanco.org	http://www.orsanco.org
PRIDE (Personal Responsibility in a Desirable Environment)	2392 S. Hwy 27, Suite 300 Somerset, KY 42501	Karen Engle Executive Director	(606) 677-6150		kengle@centertech.com	http://www.kypride.org
River Network	520 SW 6th Avenue, Suite 1130 Portland, OR 97204		(503) 241-3506 or 1-(800) 423-6747	(503) 241-9256	info@rivernetwork.org	http://www.rivernetwork.org/index.htm

Agency / Organization	Address	Contact Person	Phone Number	FAX Number	E-Mail Address	Internet Address
Sierra Club	259 W. Short St. Lexington, KY 40507		(606) 255-7946	(606) 233-4099	Information@kentuckysierraclub	http://kentucky.sierraclub.org/
The Trust for Public Land	116 New Montgomery Fourth Floor San Francisco, CA 94105		(415) 495-4014	(415) 495-0540		www.tpl.org
United States Army Corps of Engineers, Louisville District	600 Dr. Martin Luther King, Jr. Louisville, KY 40202-0059	Colonel Robert Slockbower, Commander and District Engineer	(502) 582-6501	(502) 582-5475		http://www.lrl.usace.army.mil/
United States Census Bureau	4700 Silver Hill Road Suitland, MD 20746		(301) 457-4608		econ97@census.gov	http://www.census.gov/
United States Department of Agriculture, Natural Resources Conservation Service	Natural Resources Conservation Service 14th and Independence Ave. Washington, DC 20250					http://www.nrcs.usda.gov/
United States Environmental Protection Agency, Region 4	Water Management Division 61 Forsyth Street,	Beverly Banister, Director	(404) 562-9345	(404) 562-9318		http://www.epa.gov/ , For EPA's Watershed web

Agency / Organization	Address	Contact Person	Phone Number	FAX Number	E-Mail Address	Internet Address
	SW Atlanta, GA 30303-8960					site, go to: http://www.epa.gov/owow/watershed/
United States Fish and Wildlife Service	Department of the Interior Building 1849 C Street NW, Washington DC 20240		(304) 876-7475		contact@fws.gov	http://www.fws.gov/
United States Fish and Wildlife Service	446 Neal Street Cookeville, TN 38501	Brad Bingham (Fish & Wildlife Recovery), Tyler Sykes (Threatened and Endangered Species	(931) 528-6481	(931) 528-7075	Bradley.Bingham@fws.gov, Tyler.Sykes@fws.gov	
United States Forest Service	USDA Forest Service PO Box 96090 Washington, DC 20090-6090				Mailroom/wo@fs.fed.us	http://www.fs.fed.us/intro/directory/
United States Geological Survey, Water Resources Division	9818 Bluegrass Parkway Louisville, KY 40299	Harry Rollins, District Chief	(502) 493-1900			Http://ky.water.usgs.gov/index.htm
University of Kentucky Cooperative Extension Service	Contact your local County Extension office for more information					www.ca.uky.edu/ces/index.htm
University of	Thomas Poe	Dr. Jeffrey Stringer	(859) 257-	(859) 323-1031	Jstringe@ca.ky.edu	www.uky.edu/A

Agency / Organization	Address	Contact Person	Phone Number	FAX Number	E-Mail Address	Internet Address
Kentucky, Department of Forestry	Cooper Bldg University of Kentucky Lexington, KY 40546-0073		7611			griculture/Forestry/forestry.html
University of Louisville, Institute for the Environment and Sustainable Development	Department of Pharmacology & Toxicology U of L School of Medicine Louisville, KY 40292	Dr. Steven R. Myers, Director	(502) 852-0928	(502) 852-7868		http://www.louisville.edu/org/sun/
Watershed Initiatives			(541) 345-4854	(541) 345-8599		http://www.watersheds.com/ and http://www.npr.unr.edu/

IN YOUR LOCAL WATERSHED ACTION PLAN, INCLUDE THE NAMES AND ADDRESSES, ETC., OF THE FOLLOWING LOCAL RESOURCES:

- **Division of Water Regional Office**
- **Local Area Development Districts**
- **Local Businesses and Industries**
- **Local Chamber of Commerce**

- **Local Conservation District Offices**
- **Local Cooperative Extension Offices**
- **Local Environmental Organizations**
- **Local Government (Council Members, County Judge/Executives, Mayors, County and Circuit Courts, Legislators, etc.)**
- **Local Schools and Universities**
- **Local Wastewater Treatment Plants and Sanitation Districts**
- **Local Water Management Councils**
- **Local Water Suppliers**
- **Local Water Watch**
- **Local Watershed Task Force**
- **Local Watershed Watch**
- **River Basin Team**